

**I. Start with your attitude:**

A. An exam is not a hazing

1. With very few exceptions, everyone in the room wants you to pass.
2. No different than any other form of professional quality control:
  - a. Would you want a lawyer that hadn't had to pass the bar? A doctor that hadn't passed the medical boards?
  - b. Your post-graduation performance reflects on the entire program.
3. Exams tend to feel bad because they are designed to locate the outer limits of your knowledge:
  - a. You can't know everything 4 people, who all have more experience than you, know, so we **will** find the outer limits.
  - b. We find them by asking questions until you have to say "I don't know".
  - c. You get little chance to get satisfaction from answering correctly, because if it's clear you know an area in depth, we move on.

B. Exams are in your interest

1. They ensure that you don't put in years of effort to get turned down at your defense.
2. They identify areas of weakness that move a scholar/project along the continuum of unpublishable or unfundable/fair/good/great/exceptional.
3. They provide a trapdoor for you, and for us, if there isn't a good fit between you and advisor/lab/program/field.

C. If you didn't have an exam, would you master the same materials?

1. The exam forces you to do what you ought to do anyway, and on a schedule that ensures you don't spend too much time getting your degree.
2. If you don't need the exam to master the material, then taking it should be no problem, right?

**II. Prepare appropriately**

A. Duh, cramming will not work

1. One does not become an expert in spring break week.
2. Any intelligent person recognizes this, thus trying to become an expert in one week causes panic. Panic makes you stupid.
3. When panicking, one tends to believe that giving up sleep will provide one with more useful study time. This is a fallacy, dangerously underrated in its importance, because a lack of sleep makes you stupid, and more prone to panic. See notes on effects of panic above.

4. You **MUST** schedule the studying into your work life, over a long enough period of time to be able to absorb and reflect on it.
- B. Your project/area of expertise should be well-defined
1. We can't tell what to ask you if we're not really sure in what area you are working on, so the questions will range farther afield.
  2. Some questions can't be answered unless **YOU** know what you are working on.
- C. Talk to your committee about expectations!
1. **MAKE AN APPOINTMENT** with every member of your committee, and make them tell you:
    - a. what they consider "basic skills",
    - b. what 5-10 papers they consider "seminal" to your/their field,
    - c. what they would suggest you read as review material.
- D. Make a point of synthesizing as you study
1. This is **NOT ABOUT MEMORIZATION**.
  2. The test is designed to assess you as a **SCHOLAR**
  3. If you can't connect the dots, your project has little chance of having impact.
- E. If Kent Wells is on your committee, you'd better know the big 10 historical figures in your field. He asks **everyone**, because he truly believes that a sense of history is vital to understanding your own work. And he's right. Chris Elphick has begun to absorb Kent's philosophy, so watch out for him, too!

### III. Be ready with the basics

- A. Any presentation should be **no more than** 15 minutes long
1. If you can't boil the essentials down to a 15 minute talk, you aren't ready to take the test.
  2. The longer you talk, the more ideas for questions you are giving them.
  3. Every detail you give up front is a question you could have answered correctly.
  4. The total amount of time you talk + the amount of time it takes each of 4-5 people to question you = just how exhausted you will be at the end.
- B. The four bottom line questions:
1. What is your study about?
    - a. You should be able to boil this down to **ONE** sentence; if you can't, you aren't ready to take the test.
  2. **Why are we supposed to care?**
    - a. Your decision to study something is not an intrinsic confirmation of the project's ultimate scholarly value.
    - b. You have to answer this for every audience you'll ever have; if it doesn't work on your committee (who already

have at least some interest in your work), it won't work on anyone else.

3. What will your "expected" outcome/data look like
  - a. A hypothesis implies that you have a vision of the data
  - b. A lack of vision, inversely, implies that your hypothesis is not well defined.
4. What will it MEAN if you don't get the expected outcome?
  - a. What will the data look like?
  - b. Will you be able to interpret the data?
  - c. How interesting is the alternative?

C. Understand your tools

1. If you can't explain, in detail, how every statistical test, experimental technique, and measurement technique that you are using works, you are NOT READY TO TAKE THE TEST, OR DO THE WORK.

IV. Manage your performance during the exam.

A. **Do whatever you have to do to avoid nervousness**

1. Nervousness makes you panic
2. Panic makes you stupid
3. Feeling stupid makes you panic
4. **Assume that you will flunk if that's what it takes, but don't be nervous!!!!**

B. Answer the question you've been asked

1. Almost everyone over-interprets questions, and therefore implies that they don't know the basics. Assume simplicity unless told otherwise.

C. Ask for clarification when you need it.

1. If the question is incomprehensible, ask to have it restated.
2. This technique can also gain you a minute to calm yourself
3. Don't overuse it.

D. It's OK to take some time to think.

1. Don't feel you have to leap right in.
2. Take a pause to gather your thoughts before you answer
3. Use the white board – doing so often helps you organize your thoughts as you explain something.

E. Use questions you can't answer as a bridge

1. If you don't know the answer, say so, but don't stop there!
2. Say what you DO know that relates.
3. Say so if no one else knows either.
4. Talk about how you might get the answer. (This last point is especially important – no one remembers everything, but a good scholar has a strategy for working out what they don't know.)